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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,236	02/18/2004	Yong Wang	00854P0027US	2357

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WOOD, PHILLIPS, KATZ, CLARK & MORTIMER  
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CHICAGO, IL 60661

EXAMINER

LEE, JONG SUK

ART UNIT PAPER NUMBER

3673

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/781,236	<b>Applicant(s)</b> WANG ET AL.	
	<b>Examiner</b> Jong-Suk (James) Lee	<b>Art Unit</b> 3673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 and 30-35 is/are rejected.
- 7) ☒ Claim(s) 24-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/10/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5-8, 10, 15, 16, 20-23 and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter et al (US 6,305,880).

Carter et al discloses a device and method for trenchless replacement of underground pipe through a composition/ground between first and second locations spaced from each other a substantial first distance, the method comprising the steps of: attaching a mole (40) to a cable (70); providing a support (84); providing a cable pulling assembly (120) on the support; and operating the cable pulling assembly to cause a pulling force on the cable to be continuously applied through the cable pulling assembly to the cable and therethrough to the mole to thereby cause the mole to be advanced in a path a substantial second distance at least partially over the first distance between the first and second locations, wherein the step of operating the cable pulling assembly (120), which is hydraulically actuated, comprises operating the cable pulling assembly to cause the pulling force on the cable to be continuously applied as the mole is advanced over the entire first distance between the first and second locations, wherein the step of

providing a support (84) comprises providing a support that acts between the composition and the cable pulling assembly and that transfers to the composition a reaction force generated by the cable pulling assembly as the cable pulling assembly is operated, wherein the step of providing a support comprises providing a support comprising a reaction plate (96) with an enlarged, substantially flat surface, that is borne against the composition at the second location, wherein the step of providing a support comprises providing a support comprising a frame to which the cable pulling assembly is releasably attached and a reaction cage (88), which is releasably connected to each of the reaction plate and frame with alignment pin (406), acting between the frame and the reaction plate, the method further comprising the step of causing a conduit (60) to follow movement of the mole (44) from the first location to the second location whereby a continuous passageway is defined by the conduit between the first and second locations, wherein the cable pulling assembly is releasably attached to the frame by relatively repositioning the cable pulling assembly and frame via slotted annulus (124), and the cable pulling assembly can be changed from a position fully separated from the frame into the operative position and maintained in the operative position without requiring any separate fasteners (see Figs. 1- 18; col.3, lines 40-67; col.4, lines 1-39; col.6, lines 17-42).

3. Claims 1, 2, 5-7, 10, 15, 16, 20, 21, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Nikiforuk et al (US 6,149,349).

Nikiforuk et al discloses a cable placing apparatus and method for extracting and replacing buried pipe between first and second locations spaced from each other comprising the steps of: attaching a mole (71, Fig. 10) to a cable; providing a support (6); providing a cable

pulling assembly (11) on the support; and operating the cable pulling assembly to cause a pulling force on the cable to be continuously applied through the cable pulling assembly to the cable and therethrough to the mole to thereby cause the mole to be advanced in a path a substantial second distance at least partially over the first distance between the first and second locations, wherein the step of operating the cable pulling assembly (11), which is hydraulically actuated, comprises operating the cable pulling assembly to cause the pulling force on the cable to be continuously applied as the mole is advanced over the entire first distance between the first and second locations, wherein the step of providing a support (6) comprises providing a support that acts between the composition and the cable pulling assembly and that transfers to the composition a reaction force generated by the cable pulling assembly as the cable pulling assembly is operated, wherein the step of providing a support comprises providing a support comprising a reaction plate (12) with an enlarged, substantially flat surface, that is borne against the composition at the second location, wherein the step of providing a support comprises providing a support comprising a frame to which the cable pulling assembly is releasably attached and a reaction cage (7), which is releasably connected to each of the reaction plate and frame (Figs. 2a-3b), acting between the frame and the reaction plate, the method further comprising the step of causing a conduit (70) to follow movement of the mole (71) from the first location to the second location whereby a continuous passageway is defined by the conduit between the first and second locations (see Figs. Figs. 1- 11; col.6, lines 11-67; col.7, lines 1-61; col.9, lines 3-52; col.10, lines 13-57).

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4. Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lincoln (US 6,443,658).

Lincoln discloses a ram buster/mole (40,60) and method for advancing a mole/buster to define a passageway (Fig. 1A) through a composition/ground between first and second locations spaced from each other a substantial first distance, the method comprising the steps of: attaching the mole to a cable; providing a support (15, foot and wheel of the pulling device); providing a cable pulling assembly (12) on the support; and operating the cable pulling assembly to cause a pulling force on the cable to be continuously applied through the cable pulling assembly to the cable and therethrough to the mole/ram to thereby cause the mole/ram to be advanced in a path a substantial second distance at least partially over the first distance between the first and second locations, wherein the step of operating the cable pulling assembly comprises operating the cable pulling assembly to cause the pulling force on the cable to be continuously applied as the mole is advanced over the entire first distance between the first and second locations, wherein the step of providing a support comprises providing a support that acts between the composition and the cable pulling assembly and that transfers to the composition a reaction force generated by the cable pulling assembly as the cable pulling assembly is operated, wherein the step of providing a support comprises providing a support comprising a reaction plate (15) with an enlarged, substantially flat surface, that is borne against the composition at the second location. (see Figs. 1A-C, 8, 9A-E; col.4, lines 19-60).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3, 4, 11-14, 17-19, 30, 31, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nikiforuk et al in view of McVaugh (US 5,516,080). The teachings of Nikiforuk et al have been discussed above.

However, Nikiforuk et al fails to disclose or fairly suggest a capstan assembly with associated gear assembly as the pulling assembly.

McVaugh discloses a cable placing apparatus providing a cable pulling assembly comprising a drive, a gear assembly, and a capstan assembly (27), the drive operable to operate the gear assembly to cause at least a part of the capstan assembly to be driven around a first axis so as to cause the cable to be engaged and pulled by the part of the capstan assembly as the pad of the capstan assembly is driven around the first axis advancing a mole to define a passageway, the gear assembly comprising a sun gear (105) that is driven by the drive and at least one planet gear (107) that is drivingly engaged between the sun gear and the pad of the capstan assembly,

the capstan assembly further comprising an annular cable-engaging pad (65, Fig. 4) and a drive that is operable to move the cable-engaging part around a first axis so that the cable is engaged by the cable-engaging pad and pulled as the cable-engaging part is moved around the first axis (see Figs. 1-8; col.3, lines 39-67; col.4, lines 1-58; col.5, lines 31-67; col6, lines 1-63).

Therefore, in view of McVaugh, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the hydraulic pipe pulling apparatus with the drive with the capstan and gear assembly in order to efficiently control the pulling force by manipulating the drive and gear assembly.

With respect to the bearing the cable against the cable-engaging part of the capstan assembly with the certain angle ranges such as 180 or 270 degrees, an artisan within the ordinary skill in the art would have changed the degrees of bearing the cable with controlling the position of the capstan assembly with respect to the cable pulling direction.

7. Claims 9 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al. The teachings of Carter et al. have been discussed above.

Although Carter et al fails to disclose or fairly suggest the cable pulling assembly being automatically stopped with a switch assembly in an incident of a mole being advanced to a predetermined position, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a conventional switch assembly associated with the automatic stops in order to prevent the mole from being disabled by incident or for the safety of the operator.



*Allowable Subject Matter*

8. Claims 24-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Other references cited disclose a vertical pull apparatus, a device for connecting a pipeline conduit to a ground boring machine and an underground pipe replacement method.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jong-Suk (James) Lee whose telephone number is (571) 272-7044. The examiner can normally be reached on 6:30 am to 3:00 pm, Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather C. Shackelford can be reached on (571) 272-7049. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'J. Lee' with a stylized, cursive flourish.

**Jong-Suk (James) Lee**  
**Primary Examiner**  
**Art Unit 3673**

/jjl  
January 10, 2006